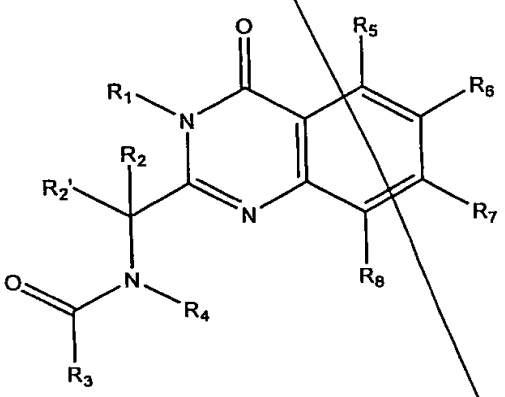
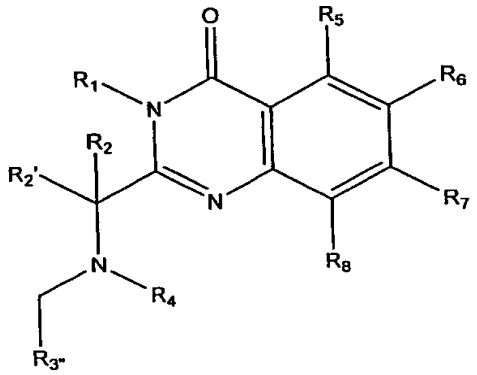
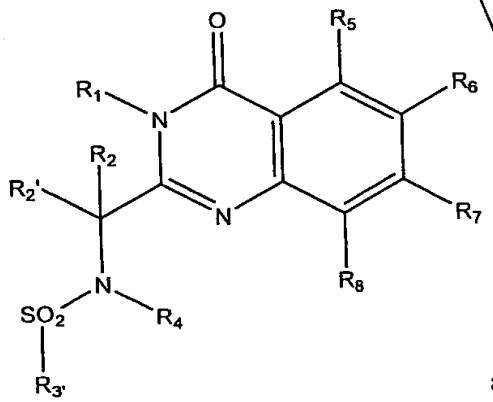
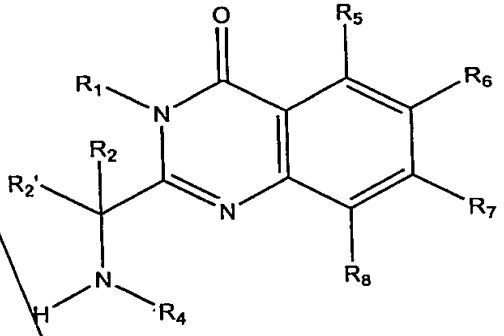
We claim:

1. A method of treating cellular proliferative diseases comprising administering a compound chosen from the group consisting of:









and

wherein:

R_1 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_2 and R_2' are independently chosen from hydrogen, alkyl, oxaalkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl; or R_2 and R_2' taken together form a 3- to 7-membered ring;

R_3 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, oxaalkyl, oxaalkylaryl, substituted oxaalkylaryl, $R_{15}O$- and R_{15}-NH-;

$R_{3'}$ is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, and R_{15}-NH-;

$R_{3''}$ is chosen from alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

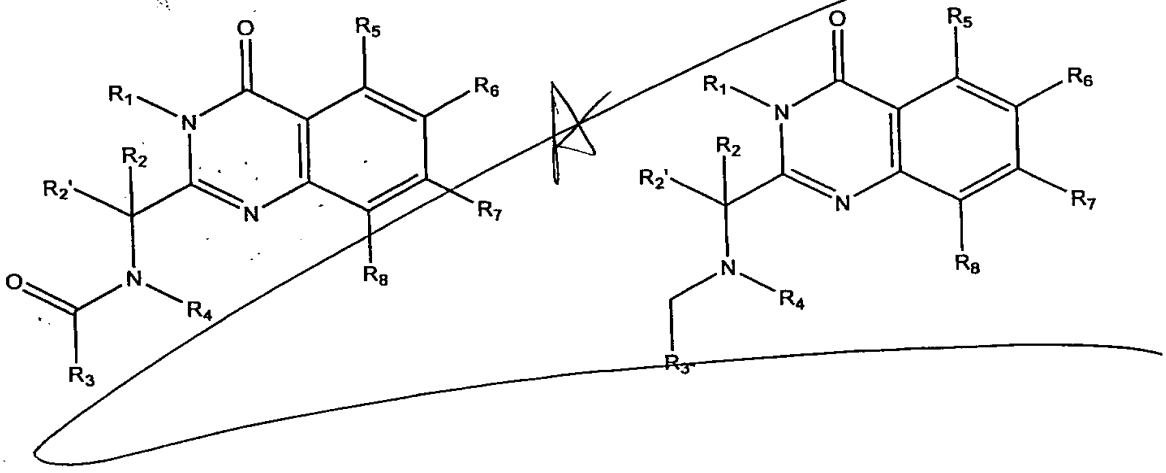
R_4 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, and R_{16}-alkylene-;

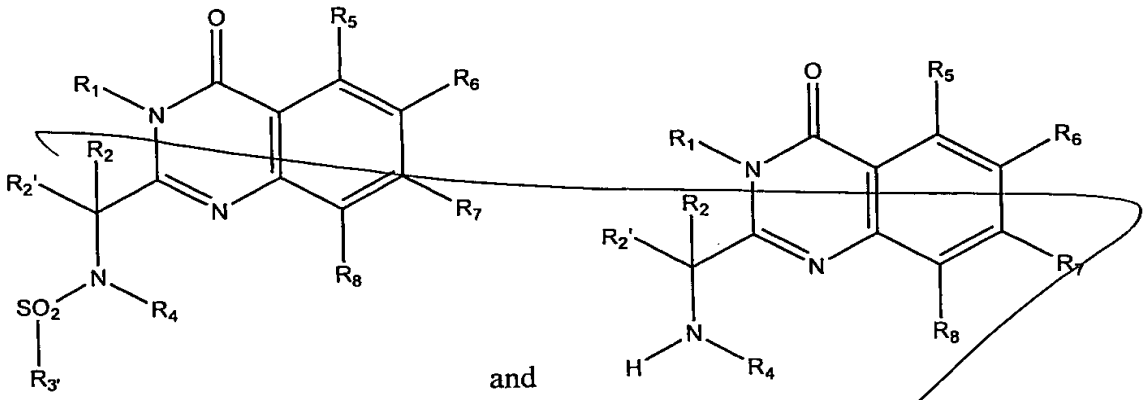
R_5, R_6, R_7 and R_8 are independently chosen from hydrogen, alkyl, alkoxy, halogen, fluoroalkyl, nitro, dialkylamino, alkylsulfonyl, alkylsulfonamido, sulfonamidoalkyl, sulfonamidoaryl, alkylthio, carboxyalkyl, carboxamido, aminocarbonyl, aryl and heteroaryl;

R_{15} is chosen from alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_{16} is chosen from alkoxy, amino, alkylamino, dialkylamino, N-heterocyclyl and substituted N-heterocyclyl.

2. ~~A method of treating a disorder associated with KSP kinesin activity~~ comprising administering a compound chosen from the group consisting of:





and

wherein:

R_1 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_2 and R_2' are independently chosen from hydrogen, alkyl, oxaalkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl; or R_2 and R_2' taken together form a 3- to 7-membered ring;

R_3 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, oxaalkyl, oxaalkylaryl, substituted oxaalkylaryl, $R_{15}O$-and R_{15}-NH-;

R_3' is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl and R_{15}-NH-;

R_3'' is chosen from alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_4 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, and R_{16}-alkylene-;

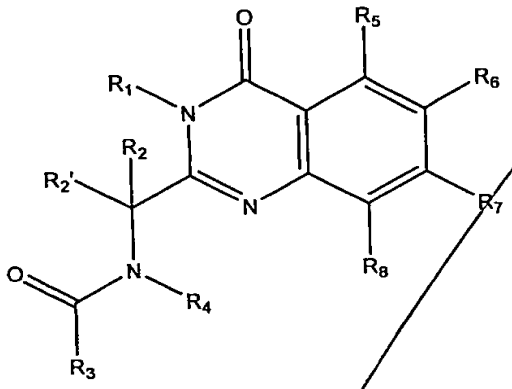
R_5, R_6, R_7 and R_8 are independently chosen from hydrogen, alkyl, alkoxy, halogen, fluoroalkyl, nitro, dialkylamino, alkylsulfonyl, alkylsulfonamido, sulfonamidoalkyl, sulfonamidoaryl, alkylthio, carboxyalkyl, carboxamido,

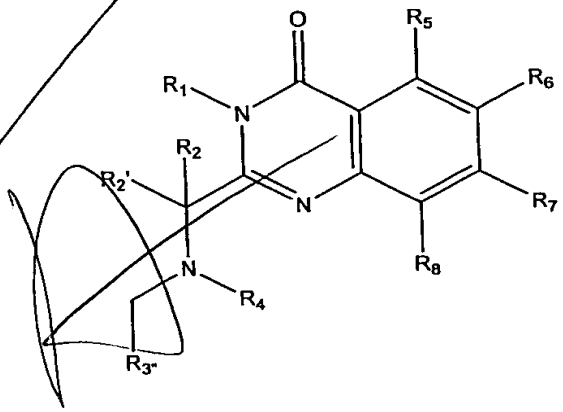
aminocarbonyl, aryl and heteroaryl;

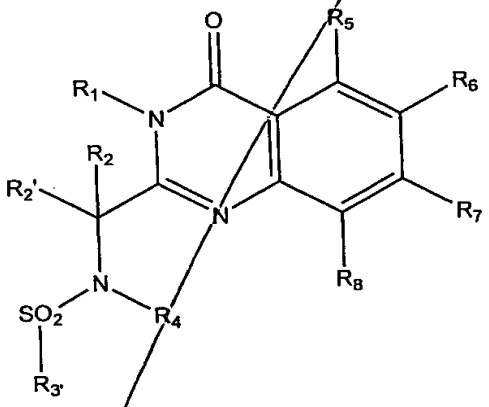
R_{15} is chosen from ~~alkyl, aryl,~~ alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_{16} is chosen from alkoxy, amino, alkylamino, dialkylamino, N-heterocyclyl and substituted N-heterocyclyl.

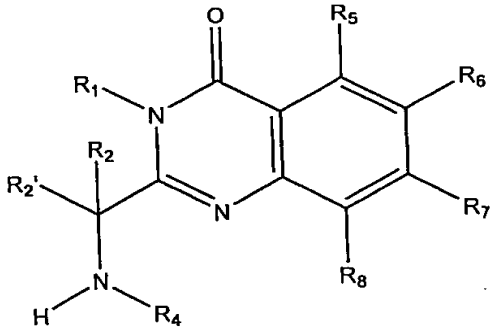
3. A method of inhibiting KSP kinesin comprising contacting KSP kinesin with a compound chosen from the group consisting of:







and



wherein:

R_1 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_2 and R_2' are independently chosen from hydrogen, alkyl, oxaalkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, ~~and substituted alkylheteroaryl;~~ or R_2 and R_2' taken together form a 3- to 7-membered ring;

R_3 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, oxaalkyl, oxaalkylaryl, substituted oxaalkylaryl, $R_{15}O$-and R_{15}-NH-;

$R_{3'}$ is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl and R_{15}-NH-;

$R_{3''}$ is chosen from alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_4 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, and R_{16}-alkylene-;

R_5, R_6, R_7 and R_8 are independently chosen from hydrogen, alkyl, alkoxy, halogen, fluoroalkyl, nitro, dialkylamino, alkylsulfonyl, alkylsulfonamido, sulfonamidoalkyl, sulfonamidoaryl, alkylthio, carboxyalkyl, carboxamido, aminocarbonyl, aryl and heteroaryl;

R_{15} is chosen from alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_{16} is chosen from alkoxy, amino, alkylamino, dialkylamino, N-heterocyclyl and substituted N-heterocyclyl.

4. A method according to claim 1, 2 or 3 wherein

R_1 is chosen from hydrogen, alkyl, aryl, substituted alkyl, substituted aryl, heteroaryl, substituted heteroaryl, alkylaryl, substituted alkylaryl and substituted alkylheteroaryl;

R_2 is chosen from hydrogen, alkyl and substituted alkyl;

R_2' is hydrogen;

R_3 is chosen from alkyl, substituted alkyl, alkylaryl, heteroaryl, aryl, substituted aryl, substituted hereroaryl, substituted oxaalkylaryl $R_{15}O$- and R_{15}-NH-;

R_4 is chosen from alkyl, aryl, alkylaryl, alkylheteroaryl, substituted alkyl, substituted aryl, and R_{16}-alkylene-;

R_5 is hydrogen;

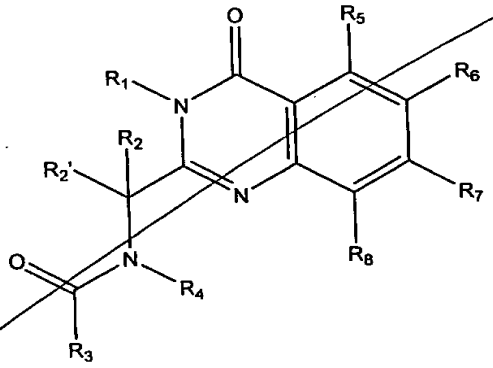
R_6, R_7 and R_8 are independently chosen from hydrogen, halogen, methyl and trifluoromethyl;

R_{15} is chosen from alkyl, aryl and substituted aryl;

R_{16} is chosen from alkoxy, amino, alkylamino, dialkylamino and N-heterocyclyl.

5. A method according to claim 4 wherein the stereogenic center to which R_2 and R_2' are attached is of the R configuration.

6. A method according to claim 1, 2 or 3 comprising administering a compound of formula:



7. A method according to claim 6 wherein R_1 is chosen from hydrogen, lower alkyl, substituted lower alkyl, benzyl, substituted benzyl, phenyl, naphthyl and substituted phenyl.

8. A method according to claim 7 wherein R_1 is chosen from hydrogen, ethyl, propyl, methoxyethyl, naphthyl, phenyl, bromophenyl, chlorophenyl, methoxyphenyl, ethoxyphenyl, tolyl, dimethylphenyl, chorofluorophenyl, methylchlorophenyl, ethylphenyl, phenethyl, benzyl, chlorobenzyl, methylbenzyl, methoxybenzyl, tetrahydrofuranylmethyl and (ethoxycarbonyl)ethyl.

9. A method according to claim 6 wherein R_2 is chosen from hydrogen, lower alkyl and substituted lower alkyl, and R_2' is hydrogen.

10. A method according to claim 9 wherein R_2 is chosen from hydrogen, methyl, ethyl, propyl, methylthioethyl, aminobutyl, (CBZ)aminobutyl, cyclohexylmethyl, benzyloxymethyl, methylsulfinylethyl, methylsulfinylmethyl, hydroxymethyl, benzyl and indolylmethyl.

11. A method according to claim 6 wherein R_3 is chosen from C_1-C_{13} alkyl; substituted lower alkyl; phenyl; naphthyl; phenyl substituted with one or more halo, lower alkyl, loweralkoxy, nitro, carboxy, methylenedioxy or trifluoromethyl; biphenylyl; benzyl; phenoxymethyl; halophenoxymethyl; phenylvinyl; heteroaryl; heteroaryl substituted with lower alkyl; and benzyloxymethyl.

12. A method according to claim 11 wherein R_3 is chosen from ethyl, propyl, chloropropyl, butoxy, heptyl, butyl, octyl, tridecanyl, (ethoxycarbonyl)ethyl, dimethylaminoethyl, dimethylaminomethyl, phenyl, naphthyl, halophenyl, dihalophenyl, cyanophenyl, halo(trifluoromethyl)phenyl, chlorophenoxymethyl, methoxyphenyl, carboxyphenyl, ethylphenyl, tolyl, biphenylyl, methylenedioxyphenyl, methylsulfonylphenyl, methoxychlorophenyl, chloronaphthyl, methylhalophenyl, trifluoromethylphenyl, butylphenyl, pentylphenyl, methylnitrophenyl, phenoxymethyl, dimethoxyphenyl, phenylvinyl, nitrochlorophenyl, nitrophenyl, dinitrophenyl, bis(trifluoromethyl)phenyl,

benzyloxymethyl, benzyl, furanyl, benzofuranyl, pyridinyl, indolyl, methylpyridinyl, quinolinyl, picolinyl, pyrazolyl, and imidazolyl.

13. A method according to claim 6 wherein R_3 is R_{15}-NH- and R_{15} is chosen from lower alkyl; cyclohexyl; phenyl; and phenyl substituted with halo, lower alkyl, loweralkoxy, or lower alkylthio.

14. A method according to claim 13 wherein R_{15} is chosen from isopropyl, butyl, cyclohexyl, phenyl, bromophenyl, dichlorophenyl, methoxyphenyl, ethylphenyl, tolyl, trifluoromethylphenyl and methylthiophenyl.

15. A method according to claim 6 wherein R_4 is chosen from lower alkyl, substituted lower alkyl, cyclohexyl; phenyl substituted with hydroxy, lower alkoxy or lower alkyl; benzyl; heteroarylmethyl; heteroarylethyl; heteroarylpropyl and R_{16}-alkylene-, wherein R_{16} is amino, lower alkylamino, di(lower alkyl)amino, lower alkoxy, or N-heterocyclyl.

16. A method according to claim 15 wherein R_4 is chosen from methyl, ethyl, propyl, butyl, cyclohexyl, carboxyethyl, carboxymethyl, methoxyethyl, hydroxyethyl, hydroxypropyl, dimethylaminoethyl, dimethylaminopropyl, diethylaminoethyl, diethylaminopropyl, aminopropyl, methylaminopropyl, 2,2-dimethyl-3-(dimethylamino)propyl, 1-cyclohexyl-4-(diethylamino)butyl, aminoethyl, aminobutyl, aminopentyl, aminohexyl, aminoethoxyethyl, isopropylaminopropyl, diisopropylaminoethyl, 1-methyl-4-(diethylamino)butyl, (t-Boc)aminopropyl, hydroxyphenyl, benzyl, methoxyphenyl, methylmethoxyphenyl, dimethylphenyl, tolyl, ethylphenyl, (oxopyrrolidinyl)propyl, (methoxycarbonyl)ethyl, benzylpiperidinyl, pyridinylethyl, pyridinylmethyl, morpholinylethyl, morpholinylpropyl, piperidinyl, azetidinylmethyl, azetidinylpropyl, pyrrolidinylethyl, pyrrolidinylpropyl, piperidinylmethyl, piperidinylethyl, imidazolylpropyl, imidazolylethyl, (ethylpyrrolidinyl)methyl, (methylpyrrolidinyl)ethyl, (methylpiperidinyl)propyl, (methylpiperazinyl)propyl, furanylmethyl and indolylethyl.

17. A method according to claim 6 wherein

R_1 is chosen from lower alkyl, benzyl, substituted benzyl and substituted phenyl;

R_2 is chosen from hydrogen, alkyl, substituted lower alkyl and benzyl;

R_2' is hydrogen;

R_3 is chosen from substituted phenyl and naphthyl;

R_4 is chosen from substituted alkyl and R_{16}-alkylene-;

R_5 is hydrogen or halo

R_6 is hydrogen, methyl or halo;

R_7 is hydrogen, halo, methyl or trifluoromethyl;

R_8 is hydrogen or halo;

R_{16} is chosen from di(lower alkylamino), (lower alkyl)amino, amino, N-heterocyclyl and substituted N-heterocyclyl.

~~18. A method according to claim 1, 2 or 3 wherein~~

R_1 is benzyl or halobenzyl;

R_2 is chosen from ethyl and propyl;

R_2' is hydrogen;

R_3 is substituted phenyl;

$R_{3'}$ is substituted phenyl;

$R_{3''}$ is substituted phenyl;

R_4 is $(CH_2)_m OH$ or $(CH_2)_p R_{16}$ wherein m is 2 or 3 and p is 1-3;

R_5 is hydrogen;

R_6 is hydrogen;

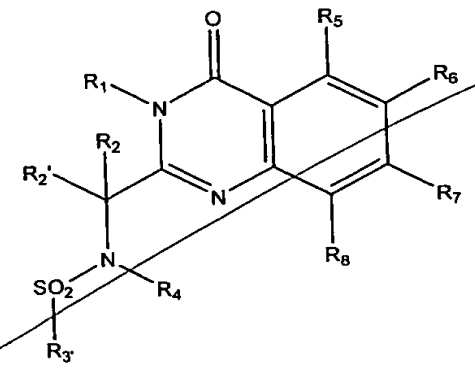
R_7 is halo;

R_8 is hydrogen;

R_{16} is chosen from amino, propylamino, and azetidinyl.

19. A method according to claim 18 wherein the stereogenic center to which R_2 and $R_{2'}$ are attached is of the R configuration.

~~20. A method according to claim 1, 2 or 3 comprising administering a compound of formula:~~



21. A method according to claim 20 wherein:

R_1 is chosen from hydrogen, lower alkyl, substituted lower alkyl, benzyl, substituted benzyl, phenyl, naphthyl and substituted phenyl;

R_2 is chosen from hydrogen, lower alkyl and substituted lower alkyl and R_2' is hydrogen;

R_3' is chosen from C_1-C_{13} alkyl; phenyl; naphthyl; phenyl substituted with halo, lower alkyl, lower alkoxy, nitro, methylenedioxy, or trifluoromethyl; biphenylyl, benzyl and heteroaryl; and

R_4 is chosen from lower alkyl, substituted lower alkyl, cyclohexyl; phenyl substituted with hydroxy, lower alkoxy or lower alkyl; benzyl; heteroarylmethyl; heteroarylethyl; heteroarylpropyl and R_{16}-alkylene, wherein

R_{16} is amino, (lower alkyl)amino, di(lower alkyl)amino, lower alkoxy, or N-heterocyclyl.

22. A method according to claim 20 wherein

R_1 is chosen from lower alkyl, benzyl, substituted benzyl and substituted phenyl;

R_2 is hydrogen or lower alkyl;

R_2' is hydrogen;

R_3 is chosen from substituted phenyl and naphthyl;

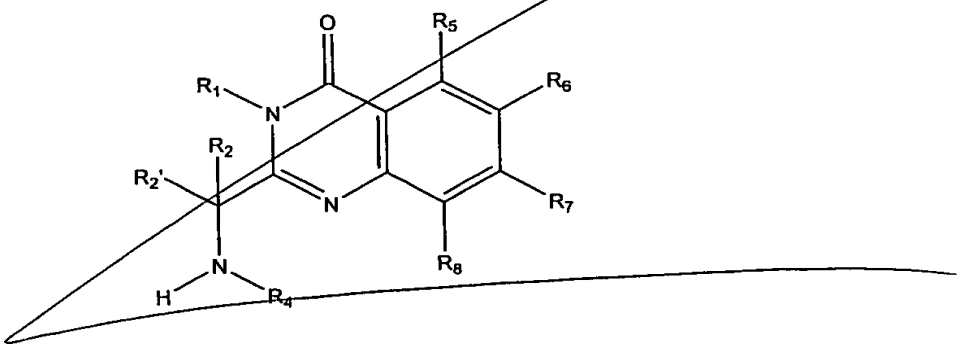
R_4 is R_{16}-alkylene- hydroxy lower alkyl or carboxy lower alkyl;

R_6 and R_7 are chosen from hydrogen and halo;

R_5 and R_8 are hydrogen;

R_{16} is chosen from di(lower alkylamino), (lower alkyl)amino, amino, piperidinyl, azetidinyl pyrrolidinyl and morpholinyl.

23. ~~A method according to claim 1, 2 or 3 comprising administering~~ a compound of formula:



Sub A5

24. A method according to claim 23 wherein:

R_1 is chosen from hydrogen, lower alkyl, substituted lower alkyl, benzyl, substituted benzyl, phenyl, naphthyl and substituted phenyl;

R_2 is chosen from hydrogen, lower alkyl and substituted lower alkyl and R_2' is hydrogen; and

R_4 is chosen from lower alkyl, cyclohexyl; phenyl substituted with hydroxy, lower alkoxy or lower alkyl; benzyl; heteroarylmethyl; heteroarylethyl; heteroarylpropyl and R_{16}-alkylene, wherein R_{16} is di(lower alkyl)amino, alkylamino, amino, lower alkoxy, or N-heterocyclyl.

25. A method according to claim 23 wherein

R_1 is chosen from lower alkyl, benzyl, substituted benzyl and substituted phenyl;

R_2 is hydrogen or lower alkyl;

R_2' is hydrogen;

R_4 is R_{16}-alkylene-;

R_6 and R_7 are chosen from hydrogen and halo;

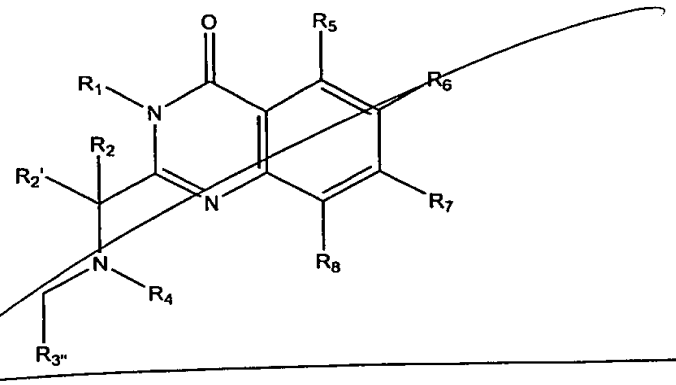
R_5 and R_8 are hydrogen;

R_{16} is chosen from di(lower alkylamino), (lower alkyl)amino, amino, pyrrolidinyl, piperidinyl, imidazolyl and morpholinyl.

Sub A6

~~26. A method according to claim 1, 2 or 3 comprising administering a~~

compound of formula:



27. A method according to claim 26 wherein:

R_1 is chosen from hydrogen, lower alkyl, substituted lower alkyl, benzyl, substituted benzyl, phenyl, naphthyl and substituted phenyl;

R_2 is chosen from hydrogen, lower alkyl and substituted lower alkyl and R_2' is hydrogen;

$R_{3''}$ is chosen from C_1-C_{13} alkyl; substituted lower alkyl; phenyl; naphthyl; phenyl substituted with halo, lower alkyl, lower alkoxy, nitro, methylenedioxy, or trifluoromethyl; biphenylyl; benzyl and heterocyclyl; and

R_4 is chosen from lower alkyl, substituted lower alkyl; cyclohexyl; phenyl substituted with hydroxy, lower alkoxy or lower alkyl; benzyl; substituted benzyl; heterocyclyl; heteroarylmethyl; heteroarylethyl; heteroarylpropyl and R_{16}-alkylene, wherein

R_{16} is di(lower alkyl)amino, (lower alkyl)amino, amino, lower alkoxy, or N-heterocyclyl.

28. A method according to claim 27 wherein

R_1 is chosen from lower alkyl, benzyl, substituted benzyl and substituted phenyl;

R_2 is hydrogen or lower alkyl;

R_2' is hydrogen;

$R_{3''}$ is chosen from substituted phenyl, heterocyclyl and naphthyl;

R_4 is chosen from subtituted benzyl, heterocyclyl substituted lower alkyl and R_{16}-alkylene-;

R_6 and R_7 are chosen from hydrogen and halo;

R_5 and R_8 are hydrogen;

R_{16} is chosen from di(lower alkylamino), (lower alkyl)amino, amino, pyrrolidinyl, azetidinyl piperidinyl, imidazolyl and morpholinyl.

29. A method according to claim 28 wherein

R_1 is benzyl;

R_2 is ethyl;

R_2' is hydrogen;

$R_{3''}$ is chosen from halophenyl, polyhalophenyl, tolyl, dimethylphenyl, methoxyphenyl, dimethoxyphenyl, cyanophenyl, trifluoromethylphenyl, trifluoromethoxyphenyl, bis(trifluoromethyl)phenyl, carboxyphenyl, t-butylphenyl, methoxycarbonylphenyl, piperidinyl and naphthyl;

R_4 is chosen from substituted benzyl, piperidinyl, hydroxy (lower alkyl) and R_{16}-alkylene-;

R_6 and R_7 are chosen from hydrogen and halo;

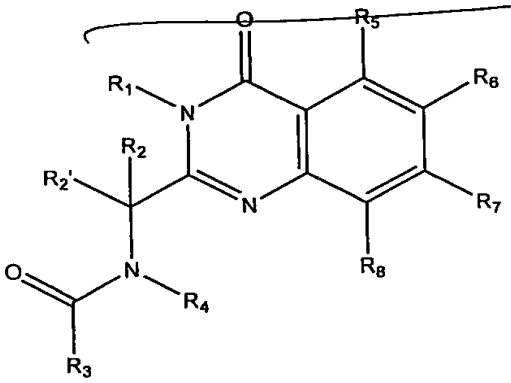
R_5 and R_8 are hydrogen;

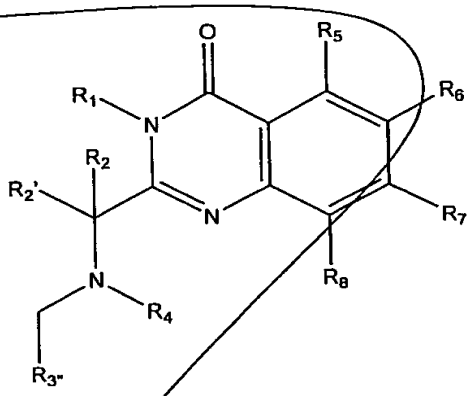
R_{16} is chosen from dimethylamino, amino, pyrrolidinyl and piperidinyl.

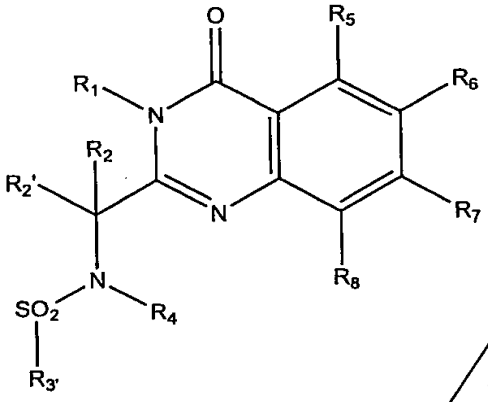
~~30. A method according~~ to claim 1 or 2 wherein said disease ~~or disorder~~ is chosen from the group consisting of cancer, ~~hyperplasia~~, restenosis, cardiac hypertrophy, immune disorders and inflammation.

Sub A7

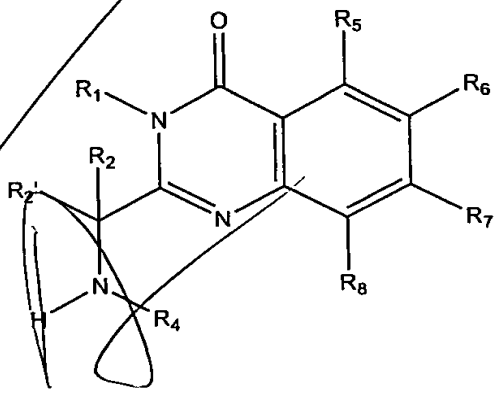
31. A compound chosen from the group consisting of:







and



wherein:

R_1 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_2 and R_2' are independently chosen from hydrogen, alkyl, oxaalkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl; or R_2 and R_2' taken together form a 3- to 7-membered ring;

R_3 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, oxaalkyl, oxaalkylaryl, substituted oxaalkylaryl, $R_{15}O$- and R_{15}-NH-;

R_3, is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl and R_{15}-NH-;

$R_{3''}$ is chosen from alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_4 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, and R_{16}-alkylene-;

R_5, R_6, R_7 and R_8 are independently chosen from hydrogen, alkyl, alkoxy, halogen, fluoroalkyl, nitro, dialkylamino, alkylsulfonyl, alkylsulfonamido, sulfonamidoalkyl, sulfonamidoaryl, alkylthio, carboxyalkyl, carboxamido, aminocarbonyl, aryl and heteroaryl;

R_{15} is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_{16} is chosen from alkoxy, amino, alkylamino, dialkylamino, N-heterocyclyl and substituted N-heterocyclyl;

with the proviso that when R_3 is R_{15}-NH- attached to carbonyl, both of R_2 and R_4 must be other than hydrogen.

32. A compound according to claim 31 wherein

R_1 is chosen from hydrogen, alkyl, aryl, substituted alkyl, substituted aryl, heteroaryl, substituted heteroaryl, alkylaryl, alkylheteroaryl and substituted alkylaryl;

R_2 is chosen from hydrogen, alkyl and substituted alkyl;

R_2' is hydrogen;

R_3 is chosen from alkyl, aryl, alkylaryl, heteroaryl, substituted aryl, substituted alkyl, substituted heteroaryl, oxaalkylaryl, substituted oxaalkylaryl, $R_{15}O$- and R_{15}-NH-;

R_4 is chosen from alkyl, aryl, alkylaryl, alkylheteroaryl, substituted alkyl, substituted aryl, and R_{16}-alkylene-;

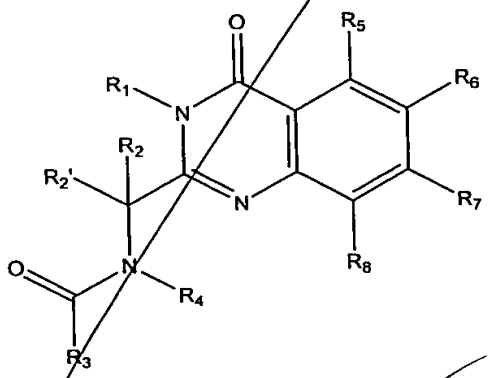
R_5 is hydrogen;

R_6, R_7 and R_8 are independently chosen from hydrogen, halogen, methyl and trifluoromethyl;

R_{15} is chosen from alkyl, aryl and substituted aryl;

R_{16} is chosen from alkoxy, amino, alkylamino, dialkylamino and N-heterocyclyl.

33. A compound according to claim 31 of formula:



34. A compound according to claim 33 wherein R_1 is chosen from hydrogen, lower alkyl, substituted lower alkyl, benzyl, substituted benzyl, phenyl, naphthyl and substituted phenyl.

35. A compound according to claim 34 wherein R_1 is chosen from hydrogen, ethyl, propyl, methoxyethyl, naphthyl, phenyl, bromophenyl, chlorophenyl, methoxyphenyl, ethoxyphenyl, tolyl, dimethylphenyl, chorofluorophenyl, methylchlorophenyl, ethylphenyl, phenethyl, benzyl, chlorobenzyl, methylbenzyl, methoxybenzyl, tetrahydrofuranylmethyl and (ethoxycarbonyl)ethyl.

36. A compound according to claim 33 wherein R_2 is chosen from hydrogen, lower alkyl and substituted lower alkyl, and R_2' is hydrogen.

37. A compound according to claim 36 wherein R_2 is chosen from hydrogen, methyl, ethyl, propyl, methylthioethyl, aminobutyl, (CBZ)aminobutyl, cyclohexylmethyl, benzyloxymethyl, methylsulfinylethyl, methylsulfinylmethyl, hydroxymethyl, benzyl and indolylmethyl.

38. A compound according to claim 33 wherein R_3 is chosen from C_1-C_{13} alkyl; substituted lower alkyl; phenyl; naphthyl; phenyl substituted with one or more halo, lower alkyl, loweralkoxy, nitro, carboxy, methylenedioxy, or trifluoromethyl; biphenylyl; benzyl; phenoxymethyl; halophenoxymethyl; phenylvinyl; heteroaryl; heteroaryl substituted with lower alkyl; and benzyloxymethyl.

39. A compound according to claim 38 wherein R_3 is chosen from ethyl, propyl, chloropropyl, butoxy, heptyl, butyl, octyl, tridecanyl, (ethoxycarbonyl)ethyl, dimethylaminoethyl, dimethylaminomethyl, phenyl, naphthyl, halophenyl, dihalophenyl, cyanophenyl, halo(trifluoromethyl)phenyl, chlorophenoxymethyl, methoxyphenyl, carboxyphenyl, ethylphenyl, tolyl, biphenylyl, methylenedioxyphenyl, methylsulfonylphenyl, methoxychlorophenyl, chloronaphthyl, methylhalophenyl, trifluoromethylphenyl, butylphenyl, pentylphenyl, methylnitrophenyl, phenoxymethyl, dimethoxyphenyl, phenylvinyl, nitrochlorophenyl, nitrophenyl, dinitrophenyl, bis(trifluoromethyl)phenyl, benzyloxymethyl, benzyl, furanyl, benzofuranyl, pyridinyl, indolyl, methylpyridinyl, quinolinyl, picolinyl, pyrazolyl, and imidazolyl.

40. A compound according to claim 33 wherein R_3 is R_{15}-NH- and R_{15} is chosen from lower alkyl; cyclohexyl; phenyl; and phenyl substituted with halo, lower alkyl, loweralkoxy, or lower alkylthio.

41. A compound according to claim 40 wherein R_{15} is chosen from isopropyl, butyl, cyclohexyl, phenyl, bromophenyl, dichlorophenyl, methoxyphenyl, ethylphenyl, tolyl, trifluoromethylphenyl and methylthiophenyl.

42. A compound according to claim 33 wherein R_4 is chosen from lower alkyl, substituted lower alkyl, cyclohexyl; phenyl substituted with hydroxy, lower alkoxy or lower alkyl; benzyl; heteroarylmethyl; heteroarylethyl; heteroarylpropyl and R_{16}-alkylene-, wherein R_{16} is amino, lower alkylamino, di(lower alkyl)amino, lower alkoxy, or N-heterocyclyl.

43. A compound according to claim 42 wherein R_4 is chosen from methyl, ethyl, propyl, butyl, cyclohexyl, carboxyethyl, carboxymethyl, methoxyethyl, hydroxyethyl, hydroxypropyl, dimethylaminoethyl, dimethylaminopropyl, diethylaminoethyl, diethylaminopropyl, aminopropyl, methylaminopropyl, , 2,2-dimethyl-3-(dimethylamino)propyl, 1-cyclohexyl-4-(diethylamino)butyl, aminoethyl, aminobutyl, aminopentyl, aminohexyl, aminoethoxyethyl, isopropylaminopropyl, diisopropylaminoethyl, 1-methyl-4-(diethylamino)butyl, (t-Boc)aminopropyl, hydroxyphenyl, benzyl, methoxyphenyl, methylmethoxyphenyl, dimethylphenyl, tolyl, ethylphenyl, (oxopyrrolidinyl)propyl, (methoxycarbonyl)ethyl, benzylpiperidinyl, pyridinylethyl, pyridinylmethyl, morpholinylethyl morpholinylpropyl, piperidinyl, azetidinylmethyl, azetidinylpropyl pyrrolidinylethyl, pyrrolidinylpropyl, piperidinylmethyl, piperidinylethyl, imidazolylpropyl, imidazolylethyl, (ethylpyrrolidinyl)methyl, (methylpyrrolidinyl)ethyl, (methylpiperidinyl)propyl, (methylpiperazinyl)propyl, furanylmethyl and indolylethyl.

44. A compound according to claim 33 wherein

R_1 is chosen from lower alkyl, benzyl, substituted benzyl and substituted phenyl;

R_2 is chosen from hydrogen, alkyl, substituted lower alkyl and benzyl;

R_2' is hydrogen;

R_3 is chosen from substituted phenyl and naphthyl;

R_4 is chosen from substituted alkyl and R_{16}-alkylene-;

R_5 is hydrogen or halo

R_6 is hydrogen, methyl or halo;

R_7 is hydrogen, halo, methyl or trifluoromethyl;

R_8 is hydrogen or halo;

R_{16} is chosen from di(lower alkylamino), (lower alkyl)amino, amino N-heterocyclyl and substituted N-heterocyclyl.

45. A compound according to claim 31 wherein

R_1 is benzyl or halobenzyl;

R_2 is chosen from ethyl and propyl;

~~R_2' is hydrogen;~~

R_3 is substituted phenyl;

$R_{3'}$ is substituted phenyl;

$R_{3''}$ is substituted phenyl;

R_4 is $(CH_2)_m OH$ or $(CH_2)_p R_{16}$ wherein m is 2 or 3 and p is 1-3;

R_5 is hydrogen;

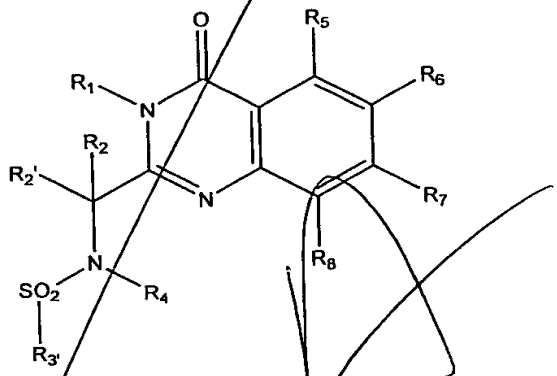
R_6 is hydrogen;

R_7 is halo;

R_8 is hydrogen;

R_{16} is chosen from amino, propylamino, and azetidinyl.

46. A compound according to claim 31 of formula:



47. A compound according to claim 46 wherein:

R_1 is chosen from hydrogen, lower alkyl, substituted lower alkyl, benzyl, substituted benzyl, phenyl, naphthyl and substituted phenyl;

R_2 is chosen from hydrogen, lower alkyl and substituted lower alkyl and R_2' is hydrogen;

$R_{3'}$ is chosen from C_1-C_{13} alkyl; phenyl; naphthyl; phenyl substituted with halo, lower alkyl, lower alkoxy, nitro, methylenedioxy, or trifluoromethyl; biphenylyl, benzyl and heteroaryl; and

R_4 is chosen from lower alkyl, substituted lower alkyl, cyclohexyl; phenyl substituted with hydroxy, lower alkoxy or lower alkyl; benzyl; heteroarylmethyl; heteroarylethyl; heteroarylpropyl and R_{16}-alkylene, wherein

R_{16} is amino, (lower alkyl)amino, di(lower alkyl)amino, lower alkoxy, or N-heterocyclyl.

48. A compound according to claim 47 wherein

R_1 is chosen from lower alkyl, benzyl, substituted benzyl and substituted phenyl;

R_2 is hydrogen or lower alkyl;

R_2' is hydrogen;

R_3 is chosen from substituted phenyl and naphthyl;

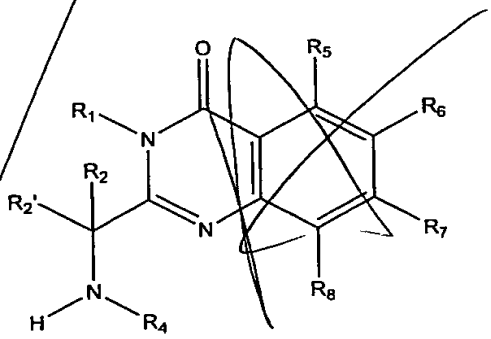
R_4 is R_{16}-alkylene-, hydroxy(lower alkyl) or carboxy (lower alkyl);

R_7 is hydrogen, fluoro, chloro or methyl;

R_5, R_6 and R_8 are hydrogen;

R_{16} is chosen from di(lower alkyl)amino, (lower alkyl)amino, amino, pyrrolidinyl and piperidinyl.

49. A compound according to claim 31 of formula:



50. A compound according to claim 49 wherein:

R_1 is chosen from hydrogen, lower alkyl, substituted lower alkyl, benzyl, substituted benzyl, phenyl, naphthyl and substituted phenyl;

R_2 is chosen from hydrogen, lower alkyl and substituted lower alkyl and R_2' is hydrogen; and

R_4 is chosen from lower alkyl, cyclohexyl; phenyl substituted with hydroxy, lower alkoxy or lower alkyl; benzyl; heteroarylmethyl; heteroarylethyl; heteroarylpropyl and R_{16}-alkylene, wherein R_{16} is di(lower alkyl)amino, (lower alkyl)amino, amino, lower alkoxy, or N-heterocyclyl.

51. A compound according to claim 49 wherein

R_1 is chosen from lower alkyl, benzyl, substituted benzyl and substituted phenyl;

R_2 is hydrogen or lower alkyl;

R_2' is hydrogen;

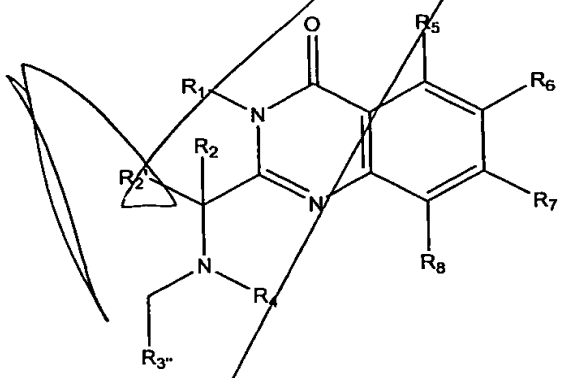
R_4 is R_{16}-alkylene-;

R_7 is hydrogen, fluoro, chloro or methyl;

R_5, R_6 and R_8 are hydrogen;

R_{16} is chosen from di(lower alkylamino), (lower alkyl)amino, amino, pyrrolidinyl, piperidinyl, imidazolyl and morpholinyl.

52. A compound according to claim 31 of formula:



53. A compound according to claim 52 wherein:

R_1 is chosen from hydrogen, lower alkyl, substituted lower alkyl, benzyl, substituted benzyl, phenyl, naphthyl and substituted phenyl;

R_2 is chosen from hydrogen, lower alkyl and substituted lower alkyl and R_2' is hydrogen;

$R_{3''}$ is chosen from C_1-C_{13} alkyl; substituted lower alkyl; phenyl; naphthyl; phenyl substituted with halo, lower alkyl, lower alkoxy, nitro, methylenedioxy, or trifluoromethyl; biphenylyl, benzyl and heterocyclyl; and

R_4 is chosen from lower alkyl, substituted lower alkyl, cyclohexyl; phenyl substituted with hydroxy, lower alkoxy or lower alkyl; benzyl; substituted benzyl, heterocyclyl, heteroarylmethyl; heteroarylethyl; heteroarylpropyl and R_{16}-alkylene, wherein

R_{16} is di(lower alkyl)amino, (lower alkyl)amino, amino, lower alkoxy, or N-

heterocyclyl.

54. A compound according to claim 53 wherein

R_1 is chosen from lower alkyl, benzyl, substituted benzyl and substituted phenyl;

R_2 is hydrogen or lower alkyl;

R_2' is hydrogen;

$R_{3''}$ is chosen from substituted phenyl, heterocyclyl and naphthyl;

R_4 is chosen from subtituted benzyl, heterocyclyl substituted lower alkyl and R_{16}-alkylene-;

R_6 and R_7 are chosen from hydrogen and halo;

R_5 and R_8 are hydrogen;

R_{16} is chosen from di(lower alkylamino), (lower alkyl)amino, amino, pyrrolidino, piperidino, imidazolyl and morpholino.

55. A compound according to claim 54 wherein

R_1 is benzyl;

R_2 is ethyl;

R_2' is hydrogen;

$R_{3''}$ is chosen from halophenyl, polyhalophenyl, tolyl, dimethylphenyl, methoxyphenyl, dimethoxyphenyl, cyanophenyl, trifluoromethylphenyl, trifluoromethoxyphenyl, bis(trifluoromethyl)phenyl, carboxyphenyl, t-butylphenyl, methoxycarbonylphenyl, piperidinyl and naphthyl;

R_4 is chosen from substituted benzyl, piperidinyl, hydroxy(lower alkyl) and R_{16}-alkylene-;

R_6 and R_7 are chosen from hydrogen and halo;

R_5 and R_8 are hydrogen;

R_{16} is chosen from dimethylamino, amino, pyrrolidinyl and piperidinyl.

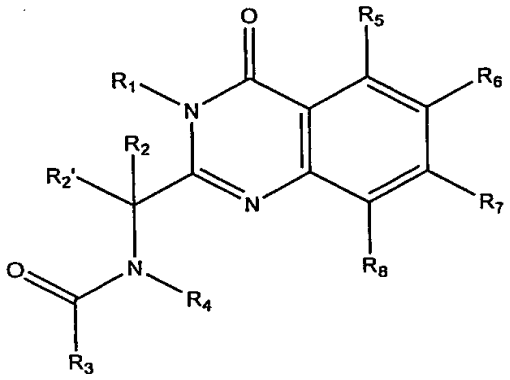
56. A compound according to any of claims 32 to 45, 47, 48, 50, 51 and 53 to 55 wherein the stereogenic center to which R_2 and R_2' are attached is of the R configuration.

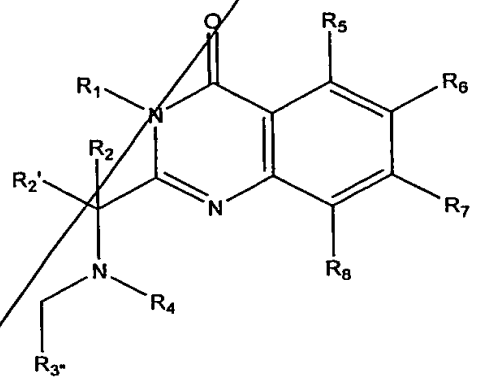
57. A compound according to claim 31 wherein said compound is of a

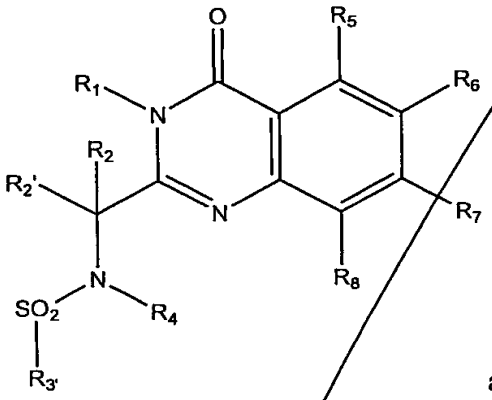
formula as defined in Figure 3.

58. A method of screening for KSP kinesin modulators comprising:

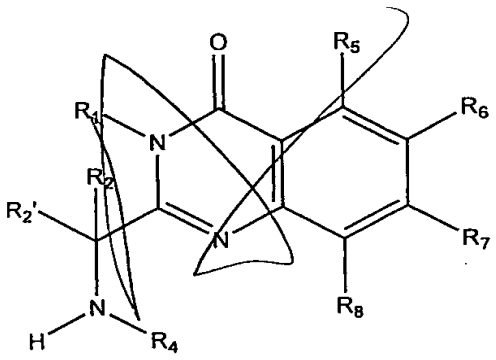
(a) combining a kinesin, a candidate bioactive agent and a compound chosen from the group consisting of:







and



wherein:

R_1 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_2 and R_2' are independently chosen from hydrogen, alkyl, oxaalkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl; or R_2 and R_2' taken together form a 3- to 7-membered ring;

R_3 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, oxaalkyl, oxaalkylaryl, substituted oxaalkylaryl, $R_{15}O$- and R_{15}-NH-;

$R_{3'}$ is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl and R_{15}-NH-;

$R_{3''}$ is chosen from alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl; substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_4 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, and R_{16}-alkylene-;

R_5, R_6, R_7 and R_8 are independently chosen from hydrogen, alkyl, alkoxy, halogen, fluoroalkyl, nitro, dialkylamino, alkylsulfonyl, alkylsulfonamido, sulfonamidoalkyl, sulfonamidoaryl, alkylthio, carboxyalkyl, carboxamido, aminocarbonyl, aryl and heteroaryl;

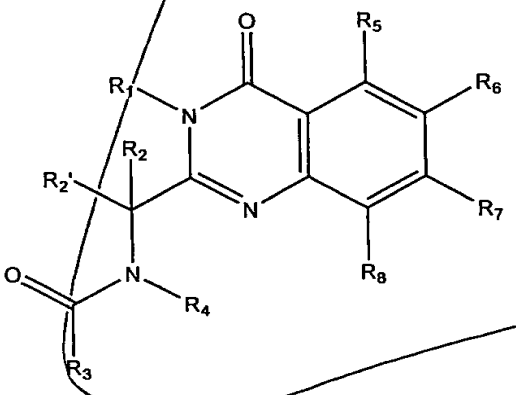
R_{15} is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

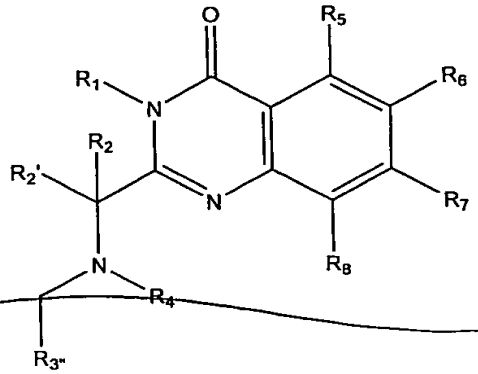
R_{16} is chosen from alkoxy, amino, alkylamino, dialkylamino, N-heterocyclyl and substituted N-heterocyclyl; and

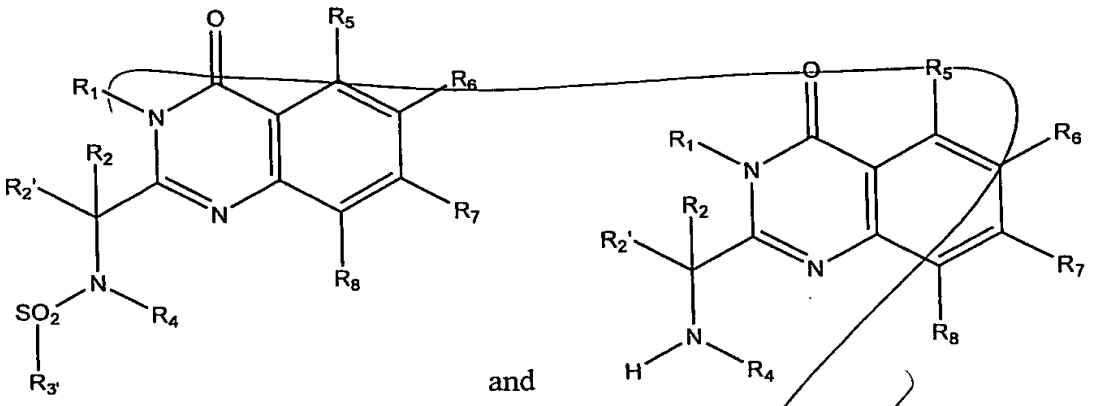
(b) determining the effect of said candidate bioactive agent on the activity of said kinesin.

59. A method of screening for compounds that bind to KSP kinesin comprising:

(a) combining a kinesin, a candidate bioactive agent and a labeled compound chosen from the group consisting of:







and

wherein:

R_1 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_2 and R_2' are independently chosen from hydrogen, alkyl, oxaalkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl; or R_2 and R_2' taken together form a 3- to 7-membered ring;

R_3 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, oxaalkyl, oxaalkylaryl, substituted oxaalkylaryl, $R_{15}O$- and R_{15}-NH-;

$R_{3'}$ is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl and R_{15}-NH-;

$R_{3''}$ is chosen from alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_4 is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, substituted alkylheteroaryl, and R_{16}-alkylene-;

R_5, R_6, R_7 and R_8 are independently chosen from hydrogen, alkyl, alkoxy, halogen, fluoroalkyl, nitro, dialkylamino, alkylsulfonyl, alkylsulfonamido,

sulfonamidoalkyl, sulfonamidoaryl, alkylthio, carboxyalkyl, carboxamido, aminocarbonyl, aryl and heteroaryl;

R_{15} is chosen from hydrogen, alkyl, aryl, alkylaryl, heteroaryl, alkylheteroaryl, substituted alkyl, substituted aryl, substituted alkylaryl, substituted heteroaryl, and substituted alkylheteroaryl;

R_{16} is chosen from alkoxy, amino, alkylamino, dialkylamino, N-heterocyclyl and substituted N-heterocyclyl; and

(b) determining the binding of said candidate bioactive agent to said kinesin.

add B10

add C1